L 54515-65 EWT(1) IJP(c)

ACCESSION NR: AR5014264 UR/0081/65/000/007/G013/G013

12

B

SOURCE: Ref. zh. Khimiya, Abs. 7G81

AUTHOR: Dopott, Z.M.; Sklyarova, Z.N.

TITLE: Quantitative spectral determination of rare earths of the yttrium group by means of a DFS-13 diffraction spectrograph 21

CITED SOURCE: Byul. nauchno-tekhn. inform. Gos. geol. kom-t SSSR. Otd. nauchno-tekhn. inform. VIEMSa, no. 2(52), 1964, 81-82

TOPIC TAGS: rare earth analysis, yttrium group determination, spectroscopic analysis, diffraction spectrograph, fluorite analysis

TRANSLATION: To determine rare earth elements in fluorites, use is made of a DFS-13 spectrograph with a grid of 600 lines/mm and a working spectral range of 3000-3500 A in the second order. The determination is made using three standards. The buffer mixture contains 80% charcoal powder, 20% $BaCO_3$, and 0.01% Sc_2O_3 (internal standard). The samples and standards are mixed with the buffer mixture in the proportion 1:3. The spectra are excited in a vertical alternating-current arc (15a, 220 v). The samples are

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placed in the upper and lower electrode and are vaporized for 2.5-3 min. The slit of the spectrograph measures 0.02 mm. The photographic plates are of type II, 22 un. GOST.

SUB CODE: IC,OP ENCL: 00

Card 2/2

GABINOVA, Zh. L., sanitarnyy vrach; VASIL'YEVA, A.A., sanitarnyy vrach;
SKLYARSKAYA, N. Kh., sanitarnyy vrach; MANITA M.D., kand. biolog.
nauk

Experience in the study of air pollution with 3,4-benzopyrene
in industrial enterprise regions. Gig. i san. 28 no.6:65-69
Je '63. (MIRA 17:4)

1. Iz Gorodskoy sanitarno-epidemiologicheskoy stantsii Moskvy.

SKLYAROVSKIY, V. V.

Нет

НЕТ

FEL'DMAN, D.I.; SKLYARSKIY, A.M.

Methods of processing capron, and its physical and mechanical properties. Plast.massy no.8:35-38 '61. (MIRA 14:7)
(Nylon)

SKLYARSKIY, A.M.

Centrifugal casting of gear wheels and large blanks of polyamide resins. Plast.massy no.12:22-26 '61. (MIRA 14:12)
(Plastics)
(Polyamides)

SKLYARSKIY, A.M.

Centrifugal casting machine. Plast.massy no.12:64-65 '61.
(MIRA 14:12)

(Plastics)
(Centrifugal casting)

SKLYARSKIY, A.M.

Tanks made of thermoplastics. Plast.massy no.12:65 '61.
(MIRA 14:12)

(Thermoplastics)

SKLYARSKIY, A. M.

Centrifugal molding of plastics abroad. Plast.massy no.3:70-74 '62. (MIRA 15:4)

(Plastics--Molding)

SKLYARSKI~~Y, A.M.~~

Centrifugal casting of plastic pipes abroad. Plast.massy no.5: 72-74 '62. (MIRA 15:4)

(Pipe, Plastic)

SKLYARSKIY, Aron Moiseyevich, inzh., inzh.; SHAPIRO, A.D., inzh., red.; FOMICHEV, A.G., red. izd-va; GVIRTS, V.L., tekhn. red.

[Centrifugal casting of machine parts of polyamides] TSentrobezhnoe lit'e detalei mashin iz poliamidov. Leningrad, 1962. 30 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Sinteticheskie materialy, no.3) (MIRA 15:10)
(Amides) (Plastics--Molding)

SKLYARSKIY, A.M.

Using the baking method for the manufacture of large containers from polyethylene (from foreign periodicals). Plast.massy no.8: 71-74 '62. (MIRA 15:7)
(Plastics) (Polyethylene)

SKLYARSKIY, A. M.

Centrifugal molding of articles from powdered plastics. Plast. massy no.11:73-74 '62. (MIRA 16:1)

(Plastics—Molding)

SKLYARSKIY, A.M.

Centrifugal casting of thermoplastics. Plast.massy no.10:66-68 '63. (MIRA 16:10)

SKLYARSKIY, A.M.

Centrifugal casting of plastics abroad. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.2:90-93 '64. (MIRA 17:6)

ZAV'YALOV, Serafim Nikolayevich; SKLYARSKIY, A.S., red.; DONSKAYA, G.D., tekhn. red.

[Two-way radio communication in automobile transportation] Dvukhstoronniaia radiosviaz' na avtomobil'nom transporte. Moskva, Nauchno-tekhn. izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1961. 37 p. (MIRA 15:3)

(Radio--Installation in automobiles)

SKLYARSKIY, F.N.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Sklyarskiy, F.N.	"The Physical and Mechanical Elements of Electric Ore Lifting" (student manual)	Leningrad Mining Institute

SO: W-30604, 7 July 1954

SKLYARSKIY, V. A.

"Uber den Mechanismus der Neuralen Kreislaufregulation," Zhur. Fiz., Vol. 28, No. 2/3, pp 211-222, 1940

SKLYARUK, D.I.; STEPANOV, V.V.

Scientific acitvity of Ievhen Samiilovych Burkser; on his seventieth birthday. Geol. zhur. 17 no.2:83-86 '57. (MIRA 10:11)
(Burkser, Ievhen Samiilovych, 1887-)

SKLYARUK, D.I.; SHAPIRO, S.A.

"Naftusia" type medicinal mineral waters found in the western part of the Ukraine and study of its organic components. Gidrokhim. mat. 27:61-65 '57. (MIRA 11:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut kurortologii, Odessa.
(Ukraine--Mineral waters--Analysis)

SKLYAZHENKO, Ye.A.

Operation of electric heaters. Transp. i khran. nefti i nefteprod. no. 1:24-27 '64. (MIRA 17:5)

1. Irkutskoye upravleniye Glavnogo upravleniya po transportu i snabzheniyu neft'yu i nefteproduktami RSFSR.

KHUTORENKO, V.I.; SKLYAZHENKO, Ye.A.

Automating service stations. Transp. i khran.nefti i nefteprod. no. 3:18-23 '64. (MIRA 17:5)

1. Irkutskoye upravleniye Glavnogo upravleniya po trnasportu i snabzheniyu neft'yu i nefteproduktami RSFSR.

SKLYUKOV, F. N.

Grafoanaliticheskii metod rascheta potrebnosti v instrumentakh. Moskva, Oborongiz, 1950. 129 p. diagrs.

Graphic analytics in calculating instrument requirement.

DLC: TJ1313.S5

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

SKLYUSAREV, S.G.

Scattering of light by free electrons in stellar photospheres.
Dokl.AN SSSR 95 no.4:741-744 Ap '54. (MLRA 7:3)
(Stars--Radiation) (Electrons) (Light--Scattering)

SKLYUT, I.A; GITKINA, L.

Second United Conference of Young Neurosurgeons. Zdrav.Belor. 5 no.12:64-65 D '59. (MIRA 13:4)

(NERVOUS SYSTEM--SURGERY)

ZLOTNIK, E.I.; SKLYUT, I.A.; KUPRIYANENKO, R.A. (Minsk)

Total excision of neurinoma of the auditory nerve. Vop.neirokhir. 25 no.1:41-44 Ja '61. (MIRA 14:2)

1. Neyrokhirurgicheskoye otdeleniye Belorusskogo nauchno-issledovatel'skogo instituta nevrologii, neyrokhirurgii i fizioterapii.
(ACOUSTIC NERVE—TUMORS)

SKLYUT, I.A.

Apparatus for the examination of optokinetic nystagmus. Vest.oto-rin.
18 no.6:55-59 N-D '56. (MLRA 10:2)

1. Iz otonevrologicheskogo kabineta Belorusskogo nauchno-issledovatel'skogo instituta nevrologii, neyrokhirugii i fizioterapii.
(NYSTAGMUS
optokinetic, appar. for exam. in diag. of brain tumors)
(BRAIN NEOPLASMS, diag.
determ. of optokinetic nystagmus with special apparatus)

SKLYUT, I. A.

USSR/ General Problems of Pathology. Tumors U-4

Abs Jour : Ref Zhur - Biol., No 5, 1958, 23104

Author : Kaleda, V.I., Sklyut, I.A.
Inst : -
Title : A Rare Case of Temporal Bone Angioma.

Orig Pub : Zdravookhr. Belorussii, 1957, No 1, 65-66

Abstract : No abstract.

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SKLYUT, I.A.

Apparatus for study of binauralhearing. Vest.oto-rin. 20 no.4:92-93 Jl-Ag '58 (MIRA 11:7)

1. Iz otonevrologicheskogo kabineta Belorusskogo instituta nevrologii, neurokhirurgii i fizioterapii (nauchnyy rukovoditel' - deystvitel'nyy chlen AN BSSR, D.A. Markov).
(HEARING TESTS, appar. & instruments
appar. for binaural hearing testing (Rus))

SKLYUT, I.A.

Commutator for electrodes for use in electronystagmography. Zdrav. Belor. 5 no.2:54 F '59. (MIRA 12:7)

1. Iz otonevrologicheskogo kabineta Belorusskogo nauchno-issledovatel'skogo instituta nevrologii, neyrokhirurgii i fizioterapii (direktor Ye.F. Kalitovskiy, nauchnyy rukovoditel' - prof. D.A. Markov).

(NYSTAGMUS) (EYE, INSTRUMENTS AND APPARATUS FOR)

SKLYUT, I.A.

Diagnosis of tumors of the auditory nerve. Zdrav. Belor. 5 no.11: 16-19 N '59. (MIRA 13:3)

1. Iz otonevrologicheskogo kabineta Belorusskogo instituta nevrologii, neyrokhirurgii i fizioterapii (direktor - kand.med.nauk Ye.F. Kalitovskiy, nauchnyy rukovoditel' - akademik AN BSSR D.A. Markov).

(ACOUSTIC NERVE--TUMORS)

SKLYUT, I.A. (Minsk)

Diagnostic value of vinaural hearing disorders in spratentorial tumors of the brain. Vop.neirokhir. 25 no.2:34-37 Mr-Ap '61.
(MIRA 14:6)

1. Belorusskiy gosudarstvennyy nauchno-issledovatel'skiy institut nevrologii, neyrokhirurgii i fizioterapii.
(BRAIN--TUMORS) (HEARING)

L 27912-66 EWT(1) SCTB DD

ACC NR: AP6017766 SOURCE CODE: UR/0246/65/065/005/0652/0656

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AUTHOR: Sklyut, I. A.; Ginzburg, S. Ye.

ORG: Otoneurological Department, Belorussian Scientific Research Institute of Neurology, Neurosurgery and Physiotherapy/directed by Docent I. P. Antonov/ (Otonevrologicheskiy kabinet Belorusskogo nauchno-issledovatel'skogo instituta nevrologii, neyrokhirurgii i fizioterapii); Laboratory of Clinical Neurophysiology/ headed by Professor D. A. Markov/, Institute of Physiology, AN BSSR, Minsk (Laboratoriya klinicheskoy neyrofiziologii Instituta fiziologii AN BSSR)

TITLE: Correlation between vestibular nystagmus 2 and electroencephalographic activity

SOURCE: Zhurnal nevropatologii i psikhiatrii, v. 65, no. 5, 1965, 652-656

TOPIC TAGS: EEG, brain, tumor, man, bioelectric phenomenon

ABSTRACT: One hundred twenty-nine patients with tumors and tumor-like injuries of the brain were examined. The role of the functional state of the central nervous system in the origin of asymmetries of vestibular nystagmus was studied by comparing these asymmetries to the bioelectric activity of the brain. The asymmetries of vestibular nystagmus were based on evaluation of calorimetric and rotation tests. In 92.8% of the patients, asymmetry of vestibular nystagmus was weighted to the side of the injured hemisphere, which also showed a predominance of slow pathological bioelectric activity. This predominance of vestibular nystagmus on the side of the site of injury was observed not only with injury of the temporal portion of

UDC: 617.761-009.24-092 : 616.831]-07+616.831-079.2 : [617.761-009.24-07+616.831-073.97

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ACC NR: AP6017766

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the large hemispheres of the brain, but also with injuries in other locations. The correlation with bioelectric activity indicates the importance of the functional state of the supravestibular formations in the occurrence of asymmetry of vestibular reflector nystagmus. The authors conclude that relations between neuro-dynamic processes in the "normal" and injured hemispheres of the brain play an important role in the pathenogenesis of the phenomenon of asymmetry of vestibular nystagmus. Orig. art. has: 2 and 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 12Sep64 / ORIG REF: 004 / OTH REF: 005

Card 2/2 BKG

SKLYUTAUSKAS, I.G., kandidat meditsinskikh nauk.

Pathogenesis and therapy of heart diseases in disorders of respiratory rhythm. Sov. med. 20 no.3:32-37 Mr. '56 (MLRA 9:6)

1. Iz kafedry propedevtiki vnutrennikh Bolezney (zav.-dotsent M.I. Martcinkevicyus) Vil'nyusskogo universiteta.
(RESPIRATION,
disord. in heart dis. (Rus))
(HEART DISEASE, complications,
resp. disord. (Rus))

SKLYUTAUSKAS, I.G., dotsent

Serum colloid precipitation reactions in the light of the regulation of the human body's reactivity. Vrach.delo no.4:361-363 Ap'58 (MIRA 11:6)

1. Kafedra propedevtiki vnutrennikh bolezney (zav. - dots. M.I. Martsinkevichyus) Vil'nyusskogo universiteta.
(BLOOD--SEDIMENTATION)
(BLOOD--PROTEINS)

SKLYUTAUSKAS, I.G., kand.med.nauk (Vil'nyus)

Elements of Lithuanian popular medicine in the light of the problems of contemporary science. Sov.zdrav. 21 no.10:79-82 '62. (MIRA 15:10)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - dotsent M.I.Martsinkyavichyus) Vil'nyusskogo universiteta imeni V.Kapsukasa.

(LITHUANIA--MEDICINE, POPULAR)

1. SKLYUEV, N.

2. USSR (6CC)

4. Metalwork

7. Economizing electric power at the Leningrad excavator plant. Za ekon. mat., No. 2, 1953.

9. *Monthly List of Russian Accessions*, Library of Congress, May 1953, Unclassified.

SKLYUYEV, P.S.; PETROV, B.D.; TITOROV, B.D.; MOISEYEVA, Ye.G.

Quality of rolls for cold rolling. Stal' 23 no.7:651 Jl '63.
(MIRA 16:9)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya.
(Rolls (Iron mills)—Testing)

PROCESSES AND PROPERTIES INDEX

Welding of high manganese Hatfield steels. V. A. Batmanov, P. V. Sklyuev and S. G. Fiche. *Avtogennoe Delo* 8, No. 4, 17-19(1937); *Chem. Zentr.* 1938, I, 42[illegible].—The welding of hard Mn steel contg. C 0.9-1.3, Si 0.2-0.35, Mn 11.5-14.5 and Ni up to 0.25% is reported. After preliminary quenching in water from 1050-1100°, such steel can be satisfactorily welded with the use of the oxy-acetylene flame or with the arc if low-C electrodes contg. Mn 11-14 and Ni 3.5-4.5% are used. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SKLYUYEV,

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 344 - I

BOOK Call No.: TN672.V8

Author: SKLYUYEV, P. V.

Full Title: TRANSFORMATION OF AUSTENITE ON CONTINUOUS COOLING IN CONNECTION WITH MECHANICAL PROPERTIES OF HIGH-ALLOYED STEELS

Transliterated Title: Prevrashcheniye austenita pri nepreryvnom okhlazhdenii v svyazi s mekhanicheskimi svoystvami vysokolegirovannykh staley

Publishing Data

Originating Agency: All-Union Scientific Engineering and Technical Society of Machine Builders. Urals Branch

Publishing House: State Scientific and Technical Publishing House of Machine Building Literature ("Mashgiz")

Date: 1950 No. pp.: 10 No. of copies: 3,000

Text Data

This is an article from the book: VSESOYUZNOYE NAUCHNOYE INZHENERNO-TEKHNICHESKOYE OBSHCHESTVO MASHINOSTROITELEY. URAL'SKOYE OTDELENIYE, THERMAL TREATMENT OF METALS - Symposium of Conference (Termicheskaya obrabotka metallov, materialy konferentsii) (p. 128-137), see AID 223-II

Coverage: The author describes a special study of thermal treatments of large articles of alloyed and high-alloyed steels, in

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Prevrashcheniye austenita pri nepreryvnom okhlazhdenii v svyazi s mekhanicheskimi svoystvami vysokolegirovannykh staley

AID 344 - I

which the structure is changed with thickness and temperature-time exposure. Samples of chromium-nickel-molybdenum steels were subjected to systematic tests. These tests were made for the determination of the effect of velocity of cooling on the structure and mechanical properties of steel and on the effect of overcooling temperature and time of exposure on the properties of the Soviet steels 35KhN2M and 35Kh3M2.

The author makes a few critical comments on the opinion of American investigators (Bain, French, Hodge and others) concerning the effect of non-martensite structure on the variation of mechanical properties. Further on, the author states that presence of a large quantity of "upper" needle-shaped troostite lowers the mechanical properties, especially the resilience of annealed steels. The velocity of cooling at the tempering of the central zone of the article and duration of exposure must be sufficient for complete prevention of pearlite transformation in order to obtain high mechanical properties.

AID 344 - I

Prevrashcheniye austenita pri nepreryvnom okhlazhdenii v svyazi s mekhanicheskimi svoystvami vysokolegirovannykh staley

The final results of the investigation of transformation of austenite during continuous cooling and studies of the relation of mechanical properties and velocity of cooling gave important basis for correct selection of steels and for the rational method of heat treatment of articles made of high-alloyed steel. 9 charts, 1 table.

Purpose: For scientific workers

Facilities: None

No. of Russian and Slavic References: 3 Russian (1948-49)

Available: Library of Congress.

SKLYUYEV, P.V

SKLYUYEV, P.V., inzhener.

Mechanical properties of alloyed steel; revision of the All-Union State Standard no.4543-48. Standartizatsiia no.1:51-56 Ja-Fe '56.
(MIRA 9:2)

1.Uralmashzavod.
(Steel alloys--Standards)

SKLYUYEV, P.V., kandidat tekhnicheskikh nauk.

Mechanical properties of steam turbine disks. Energomashinostroenie no.2:24-28 F '56. (MIRA 9:6)
(Steel--Testing) (Steam turbines)

KVATER, I.S., kandidat tekhnicheskikh nauk; SKLYUYEV, P.V., kandidat tekhnicheskikh nauk.

Shortcomings of crankshaft standards. Standartizatsiia no.4: 55-56 Jl-Ag '56. (MLRA 9:11)

1. Uralmashzavod.
(Cranks and crankshafts--Standards)

SKLYUYEV, P.Y.

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✓ **The Influence of Hydrogen on the Mechanical Properties of Steel.** P. V. Sklyuev, L. I. Kvater, and V. F. Sharipo. (*Stal'*, 1956, (10), 909–915). [In Russian]. The influence of H_2 on the static and impact strengths and plastic properties of three steels used for making critical parts for power equipment has been studied. The composition of the steels covered the range 0·32–0·35% C, 0·30–0·50% Mn, 0·20–0·32 Si, 0·92–1·20% Cr, 0·10–2·05% Ni, 0·20–0·30% Mo, 0·012–0·026% P, and 0·010–0·015% S. All specimens had a uniform sorbitic structure, H_2 being introduced during electrolytic etching. The modification of the effects of H_2 by storage of the steel, by temperature, by the strength level of the steel, by its composition (a further series of steels being used for this) and by its structure (for one steel) is discussed.—S. K.

MT

SKLYUYEV, P.V.

Using the correlation method for studying the relations between the mechanical properties of alloyed steels. Zav.lab. 22 no.3:325-329 '56. (MLRA 10:5)

1.Ural'skiy zavod tyazhelogo mashinostroyeniya.
(Steel--Testing)

Sklyuyev, P.V.

137-1958-2-2492

Translation from: Referativnyy zhurnal Metallurgiya, 1958, Nr 2, p 43 (USSR)

AUTHORS: Gol'dshteyn, M. I., Bolotov, I. Ye., Sklyuyev, P. V.

TITLE: An Investigation of the Liquation Phenomena in a Steel Ingot (Issledovaniye likvatsionnykh yavleniy v stal'nom slitke)

PERIODICAL: V sb.: Primeneniye radioaktivn. izotopov v chernoy metallurgii. Chelyabinsk, Knigoizdat, 1957, pp 106-119

ABSTRACT: Based on a critical review of existing methods of determining quantitatively the extent of dendritic liquation in a steel ingot, a method is proposed which involves autoradiographing metallographic specimens with the aid of photographic plates, then making a quantitative determination of the concentration of an element from exposure density of the plates. The dendritic liquation of C, S, and P was studied on small laboratory ingots, and in the case of S and P also on 7.4-ton industrial ingots of medium-carbon alloy steel. In the tests involving C and S ordinary metallographic specimens were used; in the tests relating to P, laminae up to 0.05 mm thick were used. The laboratory melts were poured into two ingots; one, weighing 16 kg, was cast into a mold; the other cooled in a furnace crucible with the current on.

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137-1958-2-2492

An Investigation of the Liquation Phenomena in a Steel Ingot

In the case of the quickly cooled ingot, in the region of the acicular crystals, C became concentrated along the boundaries of the crystals, but at the center of the ingot it became concentrated in the interaxial spaces of the fine dendrites, the axes of which were poor in C. In the slowly cooled ingot the dendrites were larger, and the concentration of C in their axes was almost one-half less than in the interaxial spaces. In the quick-cooled ingot the dendritic liquation of P bore the same character as did that of C, but in the slow-cooled ingot it was practically identical throughout the ingot. The S all concentrated in the interaxial and interdendritic spaces, and its distribution throughout the ingot was similar to that of P, but with more clearly defined boundaries. S, too, was encountered in the form of sulfurous inclusions, which were practically insoluble in the solid metal. In the 7.4-ton ingot the dendritic liquation of P was obviously more pronounced in the bottom part than in the upper part, which accounts for the fact that metal from the bottom part of an ingot is oftentimes of poorer quality. The S concentrated in the interaxial and interdendritic spaces in the form of nonmetallic inclusions, the dimensions of which increased in proportion to their proximity to the center of the ingot, i.e., to their remoteness from its

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137-1958-2-2492

An Investigation of the Liquation Phenomena in a Steel Ingot

surface; also toward the center the dendritic orientation was more sharply defined. At the bottom of the ingot a dark band, rich in S and poor in P, was noted at the surface. The appearance of this band was attributed to a break in the contact between ingot and mold. Bibliography: 15 references.

V. N.

1. Steel castings--Phenomena--Analysis 2. Liquids--Applications

Card 3/3

[illegible] P.V.

350

AUTHOR: Sklyuev, P.V. and Rogovskaya, A.I., Candidate of Technical Sciences and Technician.

TITLE: Mechanical properties of a large disc made of steel 34ХН3М (34KhN3M) intended for a steam turbine. (Mekhanicheskie svoystva krupnogo diska iz stali 34ХН3М dlya parovoy turbiny.)

PERIODICAL: "Energomashinostroenie", (Power Machinery Construction), 1957, No. 3, pp. 25 - 27, (U.S.S.R.)

ABSTRACT: The mechanical properties were studied on specimens cut from a large blank which was originally manufactured from an ingot weighing 5 150 kg of a steel containing: 0.34% C, 3.23% Ni, 0.98% Cr, 0.31% Mo, 0.024% P and 0.017% S. The dimensions of the blank and the distribution of the origin of the specimens are given in Fig. 1, p.25. The disc was hardened in oil and tempered at 590 °C with subsequent slow cooling in the furnace. The mechanical properties of the blank in the various individual spots, marked in Fig. 1, are entered in Table 1. Fig. 2 shows diagrammatically the locations chosen for cutting the specimens. Fig. 3 shows the change of the mechanical properties with the length of the blank. Fig. 4 shows the change of mechanical properties along the cross-section of the blank. Fig. 5 shows the influence of the original location of the specimen in the blank on its tendency to develop temper brittleness. Figs. 6 and 7 are photos of the macro-structure of the steel at the narrow end of the blank and at the step. It was found that the metal at the rim face had the best mechanical properties; it was free

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Mechanical properties of a large disc made of steel 34ХН3М (34KhN3M) intended for a steam turbine. (Cont.)

from liquation products and had a fine dendritic structure which was formed during forging and which cooled down during the hardening process at a higher speed than the other parts of the rim. With increasing distance from the face of the rim, the hardness and impact strength properties drop as a result of decreasing cooling speed during hardening and due to the presence of large liquation products, the plasticity indices (elongation and transverse compression) also drop; due to extensive development of another dendritic liquation in the inside zones of the casting the tendency to develop temper brittleness also increases and this brings about an additional reduction of the impact strength of the specimens from the stepped section in the case of slow cooling after tempering. The obtained results and also the fact that there was no discontinuity between the mechanical properties of specimens taken from the rim during many years of practical manufacturing experience show that it would be possible to dispense with investigation of specimens from the rim and such practice would enable the speeding up, and thus reducing the cost of manufacture.

7 figures, including 3 graphs, and 2 tables.

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SOV/137-59-5-10898

18.7110

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 208 (USSR)

AUTHORS: Zamotayev, S.P., Kvater, L.I., Sklyuyev, P.V.

TITLE: The Effect of Liquid Steel Degassing on the Quality of Large-Size High-Alloy Steel Forgings

PERIODICAL: Sb. statey, Ural'skiy z-d tyazh. mashinostr. im. S. Ordzhonikidze, 1958, Nr 5, pp 59 - 72

ABSTRACT: The authors investigated the effect of liquid steel degassing in a vacuum and the duration of the vacuum removal on segragation of C, S, the macrostructure, the content of non-metallic impurities and the mechanical properties of tapered "34KhN3M" steel forgings and of steam turbine rotors forged of "34KhM1A" steel. It was established thatsteel treatment in a vacuum reduced the content of non-metallic impurities, raised plastic properties and a_k of the steel and reduced proneness of the steel to cold brittleness. In the macrostructure of the steel, the refinement of initial dendrites takes place, S and P segragation increases as well as

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SOV/137-59-5-11401

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Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 274 (USSR)

AUTHORS: Kamenskikh, V.N., Sklyuyev, P.V.

TITLE: Heat Treatment and Properties of Large-Size Parts

PERIODICAL: Sb. statey, Ural'skiy z-d tyazh. mashinostr. im. S. Ordzhonikidze, 1958, Nr 5, pp 73 - 89

ABSTRACT: Information is given on heat treatment conditions of large-size 34KhN2M steel forgings of rotors for 50,000 kw turbogenerators where quench-hardening and tempering was replaced by normalization and tempering. The author analyzes defects of heat treatment and their causes revealed by ultrasonic checking. Prevalent defects are: short intermittent cracks or pores located in the "bright" spots and revealed in macro-etching of the forgings. The "bright" spots represent segregational areas, deformed during forging, enriched with P, S and probably also with C and H. On the basis of experimental investigations and industrial tests the heat treatment technology

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reducing the defects of forgings was improved. This technology is characterized by the following peculiarities: forging of a billet to a slab of 1,100 x 2,200 mm, supercooling this slab to 280° - 320°C, heating to 640° - 660°C, holding for 100 hours. After holding the billet is transferred to a forging furnace and is heated for final forging. Final cooling according to conventional conditions and isothermal holding at 640 - 660°C is performed during 200 hours.

M.Ch.

PETROV, B.D.; SKLYUYEV, P.V.

Manufacturing rolls for cold rolling. Sbor.st.UZTM no.5:90-102
'58. (MIRA 11:12)
(Rolls (Iron mills)) (Steel forgings) (Steel--Heat treatment)

ROMANOV, Aleksandr Anisimovich; SKLYUYEV, P.V., kand.tekhn.nauk, retsenzent; FILIPPOV, I.S., kand.tekhn.nauk, red.; DUGINA, N. A., tekhn.red.

[Steel casting into vibrating molds] Lit'e sta v vibriruiushchie formy. Moskva, Gos.nauchno-tekhn.izd-v mashinostroit. lit-ry, 1959. 61 p. (MIRA 12:12)

(Steel ingots)

Sklyuyev, P.V.
p. 2-3-4-5

PHASE I BOOK EXPLOITATION SOV/3450

Termicheskaya obrabotka i svoystva krupnykh pokovok (Heat Treatment and Properties of Large Forgings), Moscow, Mashgiz, 1959. 165 p. 4,000 copies printed.

Reviewer: K.N. Sokolov, Candidate of Technical Sciences; Ed.: P.V. Sklyuyev, Candidate of Technical Sciences; Tech. Ed.: N.A.Dugina; Exec. Ed.(Ural-Siberian Division, Mashgiz): A.V. Kaletina, Engineer.

PURPOSE: This book is intended for technical personnel working in the shops, laboratories, and design offices of plants manufacturing heavy machinery and electrical equipment. It may also be of some interest to research personnel.

COVERAGE: This collection of articles describes methods employed by Uralmashzavod (Ural Heavy Machinery Plant, Sverdlovsk) for heat-treating heavy forgings. Research conducted at the plant is also discussed. Data for computing cooling rates in the quenching and normalizing of heavy forgings are given. A considerable portion of the book is devoted to information on the mechanical properties of rotors for heavy turbogenerators and one-piece steam-turbine rotors at various points along the body and neck of these parts. The main defects occurring in rotors of these types are described, their causes

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are analyzed, and methods of handling the problem are explained. Results of a study of heavy forgings made of vacuum-treated steel are given. No personalities are mentioned. References accompany most of the articles.

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AVAILABLE: Library of Congress

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VK/mas
5-26-60

GOL'DSHTEYN, Yakov Yefimovich; SKLYUYEV, P.V., kand.tekhn.nauk, retsenzent;
ZAKHAROV, B.P., red.; DUGINA, N.A., tekhn.red.

[Addition of alloying elements to steel and pig iron] Mikrolegirovanie stali i chuguna. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 197 p. (MIRA 13:1)
(Steel--Metallurgy) (Cast iron--Metallurgy)

24(8) PHASE I BOOK EXPLOITATION SOV/2117

Soveshchaniye po eksperimental'noy tekhnike i metodam vysokotemperaturnykh issledovaniy, 1956

Eksperimental'naya tekhnika i metody issledovaniy pri vysokikh temperaturakh; trudy soveshchaniya (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali) 2,200 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bankvitser.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and slags 4) new analytical methods and production of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

Experimental Techniques and Methods (Cont.) SOV/2117

Gol'dshteyn, M.I., I.Ye. Bolotov, and P.V. Sklyuyev. Investigation of Dendritic Liquation in Steel Ingots by Means of Radioactive Isotopes 724

Application of this method (autoradiography) permits both qualitative and quantitative determination of the dendritic liquation of various elements in steel. A study of the dendritic liquation of carbon, phosphorus, and sulfur by this method indicated that the content of these elements is impoverished in the dendrite axes, but high in the interaxial spaces. The concentration of carbon and phosphorus in the interaxial spaces is approximately twice that in the axes. Nearly all of the sulfur is contained in the interaxial spaces.

Karachentseva, L.N. Determination of the Sources of Contamination of Ball Bearing Steel by Means of Radioactive Isotopes 737

The radioactive-isotope method (radiometry and radiography), in combination with other methods, may be successfully used for the study of non-metallic inclusions introduced into the steel as a result of the disintegration of refractories from the furnace, pouring spout, ladle, and runner head. The amount of such inclusions formed by the disintegration of refractories during the tapping and teeming of ball bearing steel is insignificant (of the order of 10^{-5}—10^{-7}% by weight). The distribution of such foreign particles throughout the ingot is random. As a rule the inclusions are rather coarse and range in shape from globular to oblong.

4

ZLATKIN, Moisey Grigor'yevich; DOROKHOV, Nikolay Nikolayevich; LEBEDEV, Nikolay Ivanovich; MAKAROV, Nikolay Yevgen'yevich; NEYSHTAT, Zyama Fal'kovich; SYCHEV, Arkadiy Mikhaylovich; SKLYUYEV, P.V., kand. tekhn. nauk, retsenzent; TASHCHEV, A.K., kand. tekhn. nauk, retsenzent; TRUBIN, V.N., kand. tekhn. nauk, retsenzent; VSHIVKOV, P.P., inzh., retsenzent; KON'KOV, A.S., inzh., retsenzent; LEBEDEV, N.S., inzh., retsenzent; POTEKUSHIN, N.V., inzh., retsenzent; TYAGUNOV, V.A., doktor tekhn. nauk, red.; SOKOLOV, K.N., kand. tekhn. nauk, red.; SKORNYAKOV, V.B., red.; YAROSHENKO, Yu.G., red.; ZAKHAROV, B.P., inzh., red.; AMIROV, I.M., inzh., red.; MYSHKOVSKIY, V.A., inzh., red.; SHELEKHOV, V.A., inzh., red.; BOGOMOLOV, O.P., inzh., red.; KATS, I.S., inzh., red.; LEVANOV, A.N., inzh., red.; DUGINA, N.A., tekhn. red.

[Handbook on forging practices] Spravochnik rabochego kuznechno-shtampovochnogo proizvodstva. By M.G.Zlatkin i dr. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 776 p. (MIRA 14:9)

(Forging—Handbooks, manuals, etc.)

S/133/61/000/007/014/017
A054/A129

AUTHORS: Sklyuyev, P. V., Zamotayev, S. P., Kvater, L. I.

TITLE: The effect of steel pouring under vacuum on the quality of heavy forgings

PERIODICAL: Stal', no. 7, 1961, 642 - 645

TEXT: In acidic steels containing more than 2 cm^3/100 gr hydrogen, flocks form in spite of countermeasures taken. Flock formation can only be eliminated by decreasing the hydrogen content of the casting. This can be done by the degasification of the metal in vacuum. In the Uralmash zavod (Uralmash Plant), where ingots of up to 120 ton in weight are degasified during melting, tests were carried out to establish the effect of vacuum melting on the steel quality in detail. For this purpose 32.5 ton acidic and basic steel (34XH3M = 34KhN3M) ingots were produced by the vacuum melting process (at 5 - 10 mm Hg residual pressure) and 17-ton ingots in the conventional way. After cooling, normalization (with annealing) and soaking in air for two months, the forgings made of the test steel were controlled by an ultrasonic defectoscope on templates made from the central parts and ends of the forgings. The investigations showed that in the experimental

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A054/A129

The effect of steel pouring under vacuum on the...

acidic and basic steel produced by vacuum melting the hydrogen content decreases (Table 1) from 4.43 $cm^3/100$ gr to 1.5 $cm^3/100$ gr and from 7.3 $cm^3/100$ gr to 3.5 $cm^3/100$ gr, respectively, while the ingot solidified during forging and cooling after the forging process. This means that in vacuum-melted acidic steel the hydrogen content was below 2 $cm^3/100$ gr, i.e., below the limit when flocks develop in forgings which are cooled by isothermic soaking (calculating 6 hours for every 100 mm of the section instead of 12 hours). For basic 34KhN3M grade steels, however, 6-hours soaking is not sufficient to decrease the hydrogen-content below the critical limit and therefore in this steel flock formation cannot be prevented. This is due to the higher initial hydrogen content of this steel compared with acidic steel. When studying the macrostructure of acidic and basic vacuum-melted steel on stamps of the intermittent and central zones of transversal and longitudinal templates cut out of the center of acidic and basic steel forgings, a higher degree of casting and interdendritic liquation could be observed due to the intensive gas-separation caused by the vacuum treatment. This reduces the content of non-metallic inclusions in acidic steels about four times and in basic steels about twice. There are 5 figures, 2 tables and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: UZTM

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34846

S/129/62/000/003/007/009
E193/E383

18.5100

AUTHOR Sklyuyev, P.V., Candidate of Technical Sciences

TITLE Heat-treatment of turbogenerator- and Steam-turbine rotors

PERIODICAL Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1962, 45 - 49

TEXT: The object of the present investigation was to study the mechanical properties of forgings named in the title as a function of the degree of reduction in forging and subsequent heat-treatment. In all cases the manufacturing process comprised converting the ingot to a billet, upsetting the billet and then hot-forging to the final shape. The 25-100 MV steam-turbine rotors were prepared from 28 - 33-ton ingots of acid steel 34ХМ1А (34KhM1A); the reduction (expressed as the final/ /original cross-sction area) attained in the forging operation was 4 for the rotor body (950 mm in diameter) and 10 for the journal. After forging and preliminary machining, the rotors were normalized and tempered. Rotors for turbogenerators (50 MV

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E193/E383

Heat-treatment of ....

power rating) were prepared from 64-ton ingots of acid steels 34ХН2М (34KhN2M) or 34ХН3М (34KhN3M). in this case, the reduction attained in forging was 6 for the rotor body (1 000 mm in diameter) and 15 for the journal: after forging and rough machining, the 34 KhN2M rotors were quenched and tempered, those made of steel 34KhN3M being normalized and tempered. Rotors for 25 MV turbogenerators were prepared from 36-ton ingots of steel 34KhN2M the reduction in forging was 5 and 12 for the rotor body and journal, respectively, initially the heat-treatment consisted of quenching and tempering but it was later replaced by normalizing and tempering. Reduction of area (ψ), elongation (δ) and impact strength (a_k) of specimens cut from various parts of the rotor in the directions parallel and normal to their axis were determined in the first series of experiments. Typical results for steam-turbine rotors are reproduced in Fig. 1 where ψ (%), δ (%) and a_k (kgm/cm^2) are plotted against the distance (mm) from the rotor surface, the various curves relating to 1 - longitudinal specimens cut from the journal; 2 -

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E193/E383

Heat-treatment of ....

longitudinal specimens cut from the body; 3 - transverse specimens cut from the journal and 4 - transverse specimens cut from the body. In Fig. 2, the isotropy coefficient K, calculated for δ, ψ and a_k from data obtained on three steam-turbine rotors, are plotted against the distance (mm) from the rotor surface. The results for the 50 MV turbogenerator rotors were slightly different in that test pieces cut from the central region of the forging had lower plasticity than those cut from the sub-surface regions and in that the journal exhibited much higher plasticity than the rotor body. At the same time whereas the isotropy coefficient K for the rotor body was high (83 - 93%) and varied only slightly across the cross-section, its magnitude for the journal was much lower (77 - 87%) than that in the case of steam-turbine rotors. In the next series of experiments, a rejected rotor of a 25 MV turbogenerator was sectioned longitudinally one half being oil-quenched and tempered, the other normalized and tempered, after which the mechanical properties of both halves were determined.

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The results are reproduced in Table 1. Finally, the effect of the hydrogen content on the properties studied was investigated as well as means of reducing the concentration of this harmful impurity. Several conclusions were reached.

1) The degree of reduction amounting to 4 to 6, attained in forging rotor bodies, ensures high plasticity and impact strength which is fairly uniform throughout the cross-section. The isotropy coefficient of test pieces cut from the rotor body is also high and fairly uniform.

2) An increased degree of reduction (11 - 15) attained in forging the rotor journals, brings about an increase in plasticity and impact strength in the direction parallel to the forging axis, and a considerable decrease in these properties in the transverse direction. As a result the isotropy coefficient of the journals (particularly in their central regions) is considerably reduced.

3) Replacing the quenching of rotors made of steels 34KhN2M and 34KhN3M by normalizing brings about a small decrease in the

X

absolute value of plasticity and impact strength but increases the isotropy coefficient.

4) In the presence of hydrogen (1 - 2 $cm^3/100$ g) plasticity of the central zone of forgings and the isotropy coefficient for δ and ψ sharply decrease. The plasticity of hydrogen-bearing transverse specimens can be increased to a satisfactory level by prolonged (30 days) ageing at room temperature, or short (4 - 6 hours) treatment at 450 °C.

5) High plasticity and a high degree of anisotropy of the mechanical properties of forged components can be attained by using vacuum-melted steel. There are 3 figures and 3 tables.

ASSOCIATION: Uralmashzavod

VOKHOMSKIY, N.S., inzh.; SKLYUYEV, P.V., kand.tekhn.nauk

Heat treatment of rolls for cold rolling. Metalloved. i term. obr. met. no.8:50-52 Ag '62. (MIRA 15:11)

1. Magnitogorskiy gornometallurgicheskiy institut i Ural'skiy zavod tyazhelogo mashinostroyeniya imeni Sergo Ordzhonikidze.
(Rolls (Iron mills)) (Steel—Hardening)

37471

S/129/62/000/005/002/011
E111/E135

AUTHOR: Sklyuyev, P.V., Candidate of Technical Sciences

TITLE: Calculation of anti-flake heat treatment

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no.5, 1962, 12-18

TEXT: The author uses the method of I. Hobson (Ref.1: Journal of the Iron and Steel Institute, 1959) for calculating the change in the hydrogen content of forgings during annealing, and obtains deviations from practical values. He attributes the discrepancies to the fact that the hydrogen loss during pouring, solidification and forging is higher than was assumed. His own and published data give a value of 5.1 $cm^3/100$ g at the centre of a 950-mm diameter forged billet after isothermal holding for 60 hours. The significance of isothermal holding for a forging, when the initial liquid steel contained not more than 4.5-5 $cm^3/100$ g, is not only overall hydrogen removal but reduction in its local peak concentrations, with conversion of hydrogen to the molecular form. Tests were carried out on types 34ХН1М (34KhN1M), 34ХН3М (34KhN3M) and other flake-susceptible

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steels with various heat treatments: flaking is prevented in forgings from the steels produced in acid furnaces when the cooling time gives a value of 0.09-0.11 for the function $\tau = Dt/\gamma^2$, where D is the coefficient of diffusion of hydrogen in cm^2/hour, t the time (hours), γ the forging radius (cm). Since the hydrogen content of the steel and its tendency to segregate also affect flake susceptibility there is no universally applicable set of cooling conditions for steels melted in different ways. Further work to determine hydrogen contents in liquid steel, and the amount removed during the production of the forging, is being carried out.
There are 4 figures and 4 tables.

ASSOCIATION: Uralmashzavod

PETROV, B.D., inzh.; SKLYUYEV, P.V., kand.tekhn.nauk

Effect of conditions of heating with commercial frequency currents on residual stresses and resilience of rolls for cold rolling. Metalloved. i term. obr. met. no.10:50-52 O '62.
(MIRA 15:10)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya imeni Sergo Ordzhonikidze.
(Rolls (Iron mills))

SKLYUYEV, P.V.

Hydrogen content in liquid steel. Stal' 22 no.9:797-798 S '62. (MIRA 15:11)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya.
(Steel--Hydrogen content)

SKLYUYEV, P.V.; KALETINA, A.V., inzh., ved. red.; YERMAKOV, N.P., tekhn. red.

[Hydrogen and flakes in large forgings] Vodorod i flokeny v krupnykh pokovkakh. Moskva, Mashgiz, 1963. 187 p. (MIRA 16:10)

(Steel--Hydrogen content) (Forging)

ACCESSION NR: AR4041600 S/0137/64/000/005/I019/I020

SOURCE: Ref. zh. Metallurgiya, Abs. 5I121

AUTHOR: Gel'd, P. V.; Gol'tsov, V. A.; Sklyuyev, P. V.; Kvater, L. I.

TITLE: Influence of coagulation of carbides on water permeability of steel

CITED SOURCE: Sb. Vliyaniye vodoroda na sluzhebn. svoystva stali. Irkutsk, 1963, 140-147

TOPIC TAGS: steel, water penetration, hydrogen penetration, carbide, carbide coagulation

TRANSLATION: Regularities of hydrogen permeability of steel 80KhN1M and steel 34KhN1M with initial structures of martensite, bainite and perlite in interval of 200 - 900° with pressure drop of 10- 760 mm Hg for 20, 40, 60 and 100 hours were studied. Water permeability of steel with initial structure of martensite and bainite annealed at 650°, turns out to be higher than for steel

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ACCESSION NR: AR4041600

with platy separations of carbides with intial perlitic structure as a result of coagulation of carbides. Maximum water permeability of steel 80KhN1M annealed at 650° is observed during holding ≥ 20 hr of samples with initial perlite structure and ≥ 40 hr of samples with initial structure of martensite and bainite at the same temperature. Conversion of platy form of carbides into granular noticeably increases water permeability in even greater measure, the higher the content of C in steel. For increase of water permeability of steel it is considered expedient first to carry out decomposition of austenite up to obtaining of martensite of lower bainite, and then to increase temperature to 650 - 680° for the purpose of formation of structure of granular cementite.

SUB CODE: MM ENCL: 00

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SKLYUYEV, P.V.; TITOROV, B.D.

Review of A.S. Petrov and A.I. Karmanov's book "Manufacture of rolls for cold rolling." Metalloved. i term. obr. met. no.7:61-62 Jl '63. (MIRA 16:7)

(Rolls (Iron mills))
(Petrov, A.S.)
(Karmanov, A.I.)

SKLYUYEV, P.V.

Review of I.G.Generson's book "Production of turbine and compressor disk forgings." Metalloved. i term. obr. met. no.1:60-61 Ja '64.
(MIRA 17:3)

PETROV, A.B., inzh.; SAL'TEV, P.V., kand. tekhn. nauk

Residual stresses in large forgings depending on the rate of cooling after tempering. Sbor. st. NIITYAZHMASHa Uralmashzavoda no.4:94-108 '64.

SKLYUYEV, P.V.; GRIGOR'YEV, I.I.

Vacuum treatment of steel for seamless-forged steam turbine rotors. Metalloved. i term. obr. met. no. 6:34-36 Je '64.
(MIRA 17:7)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya imeni Sergo Ordzonikidze.

L 36721-65 EWT(m)/EWA(d)/EPR/T/EWP(t)/EWP(b)/EWA(c) Ps-4 IJP(c) MJW/JD/GS

ACCESSION NR: AT4045965 S/0000/64/000/000/0058/0068

32 28 B+1

AUTHOR: Sklyuyev, P. V.; Mirmel'shteyn, V. A.; Pertsovskaya, Ye. V.

TITLE: High strength steels 14 for the dies of powerful presses

SOURCE: Novy͡ye materialy v mashinostroyenii (New materials in machinery manufacturing). Moscow, Izd-vo Mashinostroyeniye, 1964, 58-68

TOPIC TAGS: steel, high strength steel, press design, pressing die, austenitic transformation 18, bainite structure, steel mechanical property 14, martensite structure

ABSTRACT: At present, horizontal hydraulic presses are used for manufacturing panels, pipes and other parts from aluminum alloys. 27 The part under the highest load in this process is the die, consisting of a sleeve with intermediate and external rings. At a working temperature of 430C, the working stresses reach 90 kg/mm^2, so that the steel should have a yield point of at least 105 kg/mm^2 and an elongation of at least 6%. The weight of ingots for such sleeves reaches 75 metic tons and, since electric furnaces of such size are not available, the open-hearth melts must be of uniform quality. As a result of investigations

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ACCESSION NR: AT4045965

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performed by the Tsentral'naya laboratoriya Uralmashzavoda (Central Laboratory of the Ural Machine Plant) together with UPI, a new steel, grade A, has been developed, as well as grade B steel having higher plasticity and viscosity with a lower content of carbon and alloying element. The diagram of austenitic transformation is similar for both steels, but the temperature of the bainite and martensite transformation is higher for grade B steel. Air cooling leads to a bainite structure through the entire section. These steels, both grade A and grade B, are hardened to their entire depth. At a testing temperature of 430-450C, grade A and grade B steel show higher yield points and relative elongations than the steels previously used for die production. Since the dies work at a temperature of 400-450C, relaxation processes develop in the sleeve and rings. Tests showed that the relaxation stability of grade A and grade B steel is 3-5 times as high as that of 5KhNM steel and twice as high as 38Kh2N3M steel. Tests for brittleness showed that grade A steel has higher brittleness than grade B steel. Large ingots of grade A and grade B steel are difficult to forge, however. Studies on dies made of grade A steel indicated that sleeves made of large ingots worked for three years, while preserving the working dimensions. There is not yet sufficient experience with grade B steel to compare

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ACCESSION NR: AT4045965

it with grade A steel during operation. It may be assumed that, due to its high plasticity, low brittleness and high impact strength, grade B steel will ensure high working stability. Orig. art. has: 5 figures, 3 tables and 1 formula.

ASSOCIATION: None

SUBMITTED: 16May64 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 003

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L 56056-65 EWT(m)/EPF(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(d) Pr-4
IJP(c) MJW/JD/JW

SION NR: AP5010552 UR/0129/65/000/004/0010/0014
669.15-194:669.26'24'28:539.217.5

AUTHOR: Gel'd, P. V.; Gol'tsov, V. A.; Kvater, L. I.; Sklyuyev, P. V. 36 37

TITLE: Effect of structure on the hydrogen permeability of steel B
18 27

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 4, 1965, 10-14

TOPIC TAGS: steel structure, steel hydrogen permeability, steel heat treatment, granular cementite, lamellar carbide / 80KhNM steel, 34KhNM steel 18

ABSTRACT: Hydrogen permeability was studied at 280-900C on samples of 34KhNM steel (0.36% C, 1.59% Cr, 1.48% Ni, 0.22% Mo) and 80 KhNM steel (0.79% C, 1.01% Cr, 1.03% Ni, 0.15% Mo). Suitable heat treatments produced initial structures of martensite, bainite, and pearlite in the two steels. The latter were then subjected to further heat treatments during which the hydrogen permeability was studied by phase analysis and measurements of the activation energy of the hydrogen penetration. The results obtained for both types of steel were qualitatively similar: in both cases, in samples with the initial structure of martensite and bainite, brief annealing caused a decrease in permeability, which then increased with the holding time. However, owing to the fact that the carbon

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ACCESSION NR: AP5010552

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content of 80KhNM steel is higher, the effect of structure on the hydrogen permeability is more pronounced. Thus, upon the solidification of carbides and formation of granular cementite, the permeability of 34KhNM steel increased by 30-50%, whereas that of 80KhNM steel increased by almost 200%. The structure most permeable to hydrogen was found to be that of granular cementite. The higher the carbon content, the more the permeability increases when the lamellar form of carbides is converted to the granular form. Orig. art. has: 2 figures.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural'sk Polytechnic Institute); Uralmashzavod

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 000

Card 2/2

GEL'D, P.V.; GOL'TSOV, V.A.; KVATER, L.I.; SKLYUYEV, P.V.

Effect of structure on the hydrogen permeability of steel.
Metalloved. i term. obr. met. no.4:10-14 Ap '65.
(MIRA 18:6)

1. Ural'skiy politekhnicheskiy institut i Ural'skiy zavod tyazhelogo mashinostroyeniya imeni Sergo Ordzhonikidze.

L 58887-65 EWA(h)/EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) Pab IJP(c) MJW/
JD/JG

ACCESSION NR: AP5018995 UR/0286/65/000/012/0020/0020
669.046.516

26
B

AUTHOR: Arkharov, V. I.; Kralina, A. A.; Sklyuyev, P. V.; Kavter, L. I.

TITLE: A method for reducing steel flocculation.* Class 18, No. 171871 /8

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 20

TOPIC TAGS: flocculation,* steel

ABSTRACT: This Author's Certificate introduces a method for reducing steel flocculation.* 0.3-0.5% palladium is introduced to the melt to promote hydrogen discharge by diffusion from the solid phase.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals AN SSSR)

SUBMITTED: 09Apr64 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000

Card 1/1 *Flocculation here probably means Flaking 18

SKLYUYEV, P.V., inzh.

Mechanical characteristics of discs and covers of steam turbines and air blowers. Energomashinostroenie 11 no.9:[illegible] S '65. (MIRA 18:[illegible])

KIRSANOVA, M.A.; SKLYUYEV, P.V.

Relation between hardness and ultimate strength of forged steel pieces and casts. Zav. lab. 31 no.8:1009-1010 '65. (MIRA 18:9)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya imeni Sergo Ordzhonikidze.

L 36143-66 EWT(m)/EWP(t)/ETI IJP(c) MJW/JD

ACC NR: AP6016313 (N) SOURCE CODE: UR/0182/66/000/001/0012/0014

AUTHOR: Sklyuyev, P. V.; Pertsovskaya, Ye. V.

ORG: none

TITLE: 27Kh2N2MVF high-strength tool steel

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 1, 1966, 12-14

TOPIC TAGS: TOOL STEEL, high strength steel, metal press, mechanical property, die/ 27Kh2N2MVF high strength steel, 5KhNM tool steel, 5KhNV tool steel

ABSTRACT: The Uralmashzavod Ural Machine Plant faced the problem of developing a new type of high-strength tool steel as the material for parts and tools of heavy-duty horizontal presses. The steel had to meet the following requirements: 1) high strength (yield point >100 kg/mm^2 at 450°C) at operating temperatures (430-500°C); 2) minimum content of alloy elements so as to make possible the production of large ingots by melting in an acid open-hearth furnace; 3) high hardenability so as to make it possible to induce the desired level of mechanical properties in large parts (weighing up to 30 tons) as well as in complex-shaped parts by temper normalizing instead of temper hardening; 4) ease of production. Accordingly, the Uralmashzavod developed 27Kh2N2MVF Cr-Ni steel (0.25-0.30% C, 0.17-0.37% Si, 0.50-0.80% Mn, 2.0-2.5% Cr, 1.4-1.8% Ni, 0.4-0.6% Mo, 0.4-0.6% W, 0.2-0.3% V, up to 0.030% P, up to 0.030% S) and

UDC: 621.733.4

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L 36143-66

ACC NR: AP6016313

introduced it into production. Tests established that the optimal temperatures of the heat treatment of this steel are 960-980°C, and the optimal level of mechanical properties is obtained on tempering at 550-570°C; double tempering is required in order to decompose residual austenite. Compared with standard high-strength tool steels 5KhNM and 5KhNV, the new steel displays higher plasticity and toughness both after cooling in air and after cooling at the rate of 100°C/hr. 27Kh2N2MVF steel was experimentally used to fabricate a large number of punches and die inserts for heavy-duty horizontal presses: all these components have been performing irreproachably for several years; the service life of press tools made of 27Kh2N2MVF is several times as long as that of the tools made of high-strength steels 5KhNM and 5KhNV. Orig. art. has: 6 tables.

SUB CODE: 13,11/ SUBM DATE: none/ ORIG REF: 000

Card 2/2

ACC NR: AP6035947 (A) SOURCE CODE: UR/0129/66/000/010/0002/0007

AUTHOR: Sklyuyev, P. V.; Pertsovskaya, Ye. V.

ORG: NIITYaZhMASh of Yralmashzavod

TITLE: High-strength low-nickel steels for large forgings

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1966, 2-7

TOPIC TAGS: high strength steel, nickel free steel, low nickel steel, steel property/ 35KhGM steel, 35KhGV steel, 35Kh3M steel, 35Kh2G2M steel, 34Kh2N2M steel, 34Kh2N2MF steel

ABSTRACT: In a serach for a less expensive substitute for 34KhN1M and 34KhN3M nickel steels, the 35KhGM, 35KhGV, 35Kh2G2M, and 35Kh3M nickel-free steels, and 34Kh2N2M and 34Kh2N2MF low-nickel steels have been tested. It was found that at a coding rate of 160 degrees/hr, the austenite of 34KhN1M and 35KhNV steels is more stable in the bainitic region than the austenite of 35KhGM, 35KhGV or 35Kh3M steels, in which austenite transforms to pearlite. The hardenability of 34KhN1M, 35KhNV, 35KhGM, 35Kh3M and 35KhGV steels was roughly the same, with a hardness of HRC 43—45 at a distance of 70—110 mm from the quenched end. The tensile strength of annealed and air-cooled 35KhGM, 35KhGV and 35Kh3M steels was 90.2—92.1 kg/mm^2; that of 35Kh2G2M, 34Kh2N2M and 34Kh2N2MF was 100.4—122.4 kg/mm^2. The strength of all the above steels is reduced with a decreasing cooling rate. 35Kh3M steel has the lowest susceptibility to temper brittleness. 34KhN3 steel is extremely susceptible to

Card 1/2 UDC: 669.15'24-194: